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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/357,528	07/19/1999	ARTHUR ZWERN	888124-02	9360

7590

10/24/2002

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EXAMINER

WALLACE, SCOTT A

ART UNIT

PAPER NUMBER

2671

DATE MAILED: 10/24/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/357,528

Applicant(s)

ZWERN ET AL.

Examiner

Scott Wallace

Art Unit

2672

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 July 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) _____ is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 15-17 and 32-34 is/are allowed.
- 6) ☒ Claim(s) 1-3,5-9,11-14,18-20,22-26,28-31,35 and 36 is/are rejected.
- 7) ☒ Claim(s) 4,10,21,27,37 and 38 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Response to Arguments

1. Applicant's arguments with respect to claim 1 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dufour U.S. Patent No. 6351572 B1 in view of Kawamura et al. U.S. Patent No. 5222159 in further in view of Hashimoto U.S. Patent No. 6434278 B1.

4. As per claims 1 and 18, Dufour discloses

Receiving from a camera a sequence of images taken sequentially and generating around the object (column 2 lines 66-67 and column 3 lines 1-4);

Generating a 3D region from a sequence of images by projecting the object onto a specific plane (column 2 lines 1-4 and column 3 lines 63-65);

Generating a mesh model from said 3D region using a tree structure (column 2 lines 5-16 and column 3 lines 3-4).

However, Dufour does not disclose generating mask images. This is disclosed in Kawamura et al in column 1 lines 20-35. It would have been obvious to one of ordinary skill in the art to use masking as in Kawamura with the system of Dufour because Dufour is using only the images of the objects and not the background (column 2 lines 1-9) therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to mask the background.

Because this would simplify determining if a voxel is within 3D depth sheet.

Also, Dufour does not disclose producing a textured 3D model from said mesh model. This is disclosed in Hashimoto column 35-44. It would have been obvious to one of ordinary skill in the art to produce texture models as in Hashimoto with the system of Dufour because Dufour and Hashimoto both disclose generating 3D models from 2D data. Hashimoto just goes a step further by generating a textured model. It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply a textured model to Dufour system because this would have made the image more realistic (column 3 lines 10-13, Hashimoto).

5. Claims 2-3 rejected under 35 U.S.C. 103(a) as being unpatentable over Dufour in view of Kawamura et al. further in view of Hashimoto and further in view of Migdal et al., U.S. Patent No. 5991437.
6. As per claim 2, the combination of Dufour, Kawamura and Hashimoto fail to disclose receiving a reference image captured when a calibration target is in the place of said object; and deriving a camera model of said camera from said reference image. However, Migdal et al discloses this in column 4 lines 60-61 and column 6 lines 1-6. It would have been obvious to one of ordinary skill in the art to use the calibration of Migdal with the combined system of Dufour, Kawamura and Hashimoto because this allowed for the calibration of multiple cameras and to easily recalibrate the new set up for accurate scanning (column 6 lines 10-15).
7. As per claim 3, Migdal et al discloses said calibration target is of round shape and has a center thereof, and wherein said reference image covers only a portion (column 4 lines 60-67 and column 4 lines 1-8) of said calibration target, said portion including said center.

Art Unit: 2671

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Scott Wallace** whose telephone number is **703-605-5163**.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Mark Zimmerman**, can be reached at 703-305-9798.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Application/Control Number: 09/357,528

Page 5

Art Unit: 2671

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

Mano Padmanabhan
AU 2671
10/21/02
(MANO PADMANABHAN)